THE DEVELOPMENT OF THE INTEGRATED THREE-COMPONENT MODEL OF AGRICULTURAL EDUCATION

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Abstract

This research project sought to determine the origin of the three-component model of agricultural education in the United States and provided a contextual base for future research into the three-component model for agricultural education. The study concluded that each of the three components of the agricultural education model originated at different times in American history but were developed simultaneously. Supervised experience probably originated in colonial America, and formal instruction in agricultural education probably began in 1858. The FFA was officially established in 1928, although similar agricultural youth organizations probably began either at the end of the nineteenth century or the beginning of the twentieth century. This study did not find evidence of an established date or recognized event that created the three-component agricultural education model. The Smith-Hughes Act of 1917 provided a more sophisticated linkage between classroom instruction and supervised experience. This study did not find evidence of a legal basis for the integral nature of the three-component agricultural education model. Instead, the integral nature of the model probably exists out of tradition, or as a result of a philosophical tenet in the agricultural education profession.

Introduction and Theoretical Framework

The predominant model for organizing instruction in agricultural education involves the interrelationships between three major concepts: classroom and laboratory instruction, supervised agricultural experience, and agricultural youth organization participation (Phipps & Osborne, 1988). Classroom and laboratory instruction are those activities that provide learning experiences within the confines of a school facility. These classroom activities are characterized by learning activities designed by an agriculture teacher and presented to students using formal instruction methods such as lecture, demonstration, guided and independent practice, review, and assessment. Instructional content includes agricultural mechanics, animal science, horticulture, agricultural production and biotechnology (Talbert, Vaughn, & Croom, 2006).

Supervised Agricultural Experience (SAE) is an independent learning program for students enrolled in agricultural education courses. It is designed to provide learning experiences for students in the agricultural career pathway of their choice. Supervised agricultural experience requires an educational plan cooperatively developed by the student, the agriculture teacher, the student's parents, and an employer if necessary. This education plan is carried out in a location outside of normal daily instruction in agricultural education. The student maintains records of his or her SAE activities. SAE experience helps students put into practice the principles learned in the agriculture classroom. Students who excel in the supervised agricultural experience are rewarded through the National FFA Organization (FFA) proficiency awards program and membership degree program.

The FFA is an instructional tool that compliments both instruction and supervised agricultural experience. FFA programs are designed to encourage students to perform well academically. In addition, the FFA assists in the development of students' interest in agricultural careers through support of the supervised agricultural experience program. FFA activities include career development events, individual

member awards programs, scholarships and leadership programs (Phipps & Osborne, 1988).

The integrated agricultural education model requires that agricultural education programs combine instruction, supervised agricultural experience and FFA (Talbert et al., 2006). However, a number of studies have indicated a decline in the number of students involved in supervised experience. Dyer and Osborne (1996) and Cheek, Arrington, Carter and Randell (1994) conclude that SAE programs lack overall direction and goals by which program quality can be measured. Even though classroom instruction improves SAE quality, there is great variance in how teachers manage the SAE program (Dyer & Osborne, 1996). A number of related studies (Dyer & Osborne, 1995; Dyer & Williams, 1997; Steele, 1997) conclude that many teacher-educators, teachers, and program administrators fail to fully implement SAE in the agricultural education program, even though SAE has a proven economic impact (Retallick & Martin, 2005). Dyer and Osborne (1996) found that no common standards existed for assessing the quality of SAE programs.

With regard to the FFA element of the model, there is a gap between the number of agricultural education students and the number of students who are official members of the FFA (Talbert et al., 2006), even though FFA membership has continued to increase in recent years (National FFA Organization, 2006a). Even though students who join the FFA were more connected to the industry of agriculture and were more engaged in agricultural education coursework (Croom & Flowers, 2001; Talbert & Balschweid, 2004), the National FFA Organization (2006a) reported a gap of almost 200,000 students between FFA membership and student enrollment in agricultural education programs. Of the components in the three-component model of agricultural education, instruction occurs with the greatest frequency. If this model is composed in such a way that classroom instruction, FFA, and SAE are integrally linked and equally weighted components, then why do the FFA and SAE components generally subordinate themselves to instruction? Figure 1 describes this model.

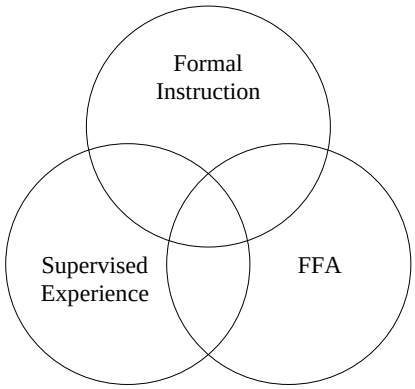

Figure 1. Diagram of the integrated three-component agricultural education model.

Hirsch's (1988) Cultural Literacy Model is the theoretical model for this study, and is based on the premise that agricultural educators need to have a basic literacy of agricultural education in order to function in their professional environment. Cultural literacy in agricultural education underpins the public discourse about the profession. Reading the scientific and popular literature in the agricultural education profession is a complex skill that requires a specific knowledge of the range of subjects that influence the profession. Learning is thus dependent upon both specific broad knowledge and a diversity of prior knowledge. Hirsch's Cultural Literacy Model encourages professional educators to continue to learn and deepen their knowledge of the profession and find deeper meaning in issues related to the development of the model by which agricultural education is performed in the United States.

Purpose and Procedure

The overall purpose of this research project was to determine the origin of the three-component model of agricultural education in the United States. The objectives for this research project were to identify the origins of each of the three components of the integrated agricultural education model and to establish the origin of the integrated agricultural education model. This research project also sought to provide a contextual base for future research on the three-component model for agricultural education. This is a historical research study. A preliminary bibliographical source was created consisting of primary and secondary sources. Primary sources of information included reports from the Federal Board for Vocational Education and the published manuscripts of agricultural educators in the early twentieth century. Secondary sources included, but were not limited to, data from refereed journal articles and historical information available from established institutions. Secondary sources were compared to selected primary sources to ascertain their accuracy. Using the methods prescribed by Gall, Borg, and Gall (1996) and Howell and Prevenier (2001), sources of information were subjected to internal criticism for accuracy and external criticism for authenticity. Readers should not assume that the findings and conclusions of this study are causal elements for modern theories associated with agricultural education.

Findings

The first known agricultural educators on the North American continent were native indigenous peoples who passed down methods for cultivation to successive generations. The first formal compulsory education system arrived on the continent through the passage of the Massachusetts Act of 1642 (Barger, 2006). Prior to this, most youth were educated through apprenticeships in the various trades in colonial America. The Massachusetts Act provided for the formal study of religion and the laws of the Commonwealth of Massachusetts. Schools became the place where classical education was provided, with studies concentrating on Latin and the basics of reading and mathematics (Urban & Wagoner, 2000).

In the mid to late eighteenth century, organizations and societies began promoting agricultural education outside of the formal school establishment. The Philadelphia Society was established in 1785 for the purpose of familiarizing members with improved agricultural methods. In 1792, the Massachusetts Society for Promoting Agriculture set up meetings for the purpose of inviting farmers to learn new methods of improving agriculture. In the 1850's, agricultural societies began to disseminate research in agricultural practices in rural communities, primarily through publications, newspaper articles and lectures. Agricultural fairs, formerly an outlet for selling farm animals and products, gradually began to include educational exhibits promoting the best agricultural practices (True, 1969). Massachusetts, Kansas and other states began to hold farmer's institutes in the 1850's. The Massachusetts Board of Agriculture appointed a committee in 1858 to develop meetings similar to teacher institutes for the purpose of teaching agricultural topics. This

same board published agricultural information in the Agriculture of Massachusetts publication as early as 1854 (True).

The United States government and agricultural colleges and universities began to support agricultural instruction through agricultural short courses made available to farmers. The Alabama State Agricultural College encouraged farmers to hold meetings regarding agricultural problems, and these meetings began in the summer of 1884. On June 23, 1868, the Kansas Agricultural College recommended that faculty lecture to assemblies of farmers on the application of modern and approved agricultural practices. In addition to farming topics and home economics subjects, programs often included rural school improvement, road improvement, keeping youth on the family farm, and rural recreation (True, 1969). On November 18, 1868, the Illinois Industrial University established a two-week course on approved practices in farming. Massachusetts, Illinois, Iowa, and New Hampshire also adopted similar institutes. By 1880, public institutes were in operation in 26 southern and central states. State boards of agriculture conducted many of these institutes (True). State appropriations for these institutes appeared in 1891 in 14 states. In 1888, the Office of Experiment Stations (established by the Hatch Act) recognized the value of farmer's institutes and began collecting data and researching the work of the institutes. At the turn of the twentieth century, agricultural education had begun to expand outward from farmer's institutes and university short courses into public schools. In 1906, school officials in Michigan, Arizona and Georgia would invite institute speakers to visit local schools and speak to the students (True).

Public school agricultural education probably originated around 1858 with the introduction of vocational agricultural training in two Massachusetts schools (Hamlin, 1962). The New York legislature passed the Nixon Law in 1897, which provided for agricultural education in public schools under the supervision of the Cornell University Agricultural College. The North Carolina state legislature passed the Farm Life Act of 1911 that created schools promoting agriculture and home economics. The course of study was approved by the state school superintendent and the farm-life school advisory board, and had to include practical farm work (Stimson & Lathrop, 1942). Eventually, the federal government would recognize the need and importance of agricultural education and create legislation that specifically encouraged states to develop agriculture teacher training programs and fund local agricultural education programs. Before the first significant federal funding for agricultural education arrived in 1917, at least 30 states had agricultural education programs operating in schools (Hamlin).

Supervised experience was probably the first component of the agricultural education model to be developed and was probably in the form of youth apprenticeships to skilled tradesmen or as informal education at home. Evidence of apprenticeship can be found in the archeological evidence of the earliest known civilizations, and supervised experience in the form of apprenticeships arrived in the American colonies with the first settlers (Struck, 1945). As the apprenticeship method thrived in the new American colonies, schools were established to encourage children to develop basic skills in reading, mathematics, history, Latin and Greek (Urban and Wagoner, 2000). One of the first federal laws to establish some form of agricultural education specifically suited to supervised experience was the Civilization Fund Act of 1819, which provided funding to teach Native Americans "the mode of agriculture suited to their situation" (Fraser, 2001, p. 47).

Significant achievement in establishing supervised experience in schools was accomplished by Rufus W. Stimson, principal of the Smith Agricultural School. Stimson developed the concept of the project method that taught students the basics of agricultural production methods. These students then applied these methods on their home farms instead of a school farm (Moore, 1988). The project method involved study directly related to the student's home project. Subject study is more general, and used to supplement the project method. The project method allows students to proceed at their own pace through the instructional

program. Stimson (1919) believed that school projects were unacceptable because they could not be made profitable. School projects often involved too many students engaged in a single project and thus disengaged from real work. Furthermore, there was no personal ownership in school projects, as all earnings went back to school accounts. Stimson proposed that projects must be on a farm and be completed under specific learning conditions with measurable results. Projects could improve existing farming projects, explore new areas of agriculture, and be entrepreneurial in nature. Stimson's curriculum included the study of production agriculture, individual project work, and class discussion of student projects (Stimson).

While vocational agriculture and supervised experience continued to gain support and acceptance, the third component of the agricultural education model began to grow. Organizations for agricultural youth grew out of the boys and girls clubs established at the turn of the twentieth century (Davis, 1912). There is some question as to when boys and girls agricultural clubs were established in the United States. McCormick and McCormick (1984) proposed that A. B. Graham organized boys and girls clubs in January 1902 in the Springfield Township School community in Clark County, Ohio. Club meetings were held once per month in an assembly room of the county building. These were corn clubs. Later the clubs were broadened to include vegetable projects. The procedure for girls and boys clubs were as follows: a few days before the monthly meeting, each boy and girl was requested to read or study selected passages from a text in order to prepare for the subject being discussed at the upcoming meeting (McCormick & McCormick, 1984).

True (1969) raised the possibility that W.B. Otwell may have actually created the first boys and girls clubs in agriculture. These clubs were created in response to the problem of poor attendance at Macopin County, Illinois farmer's institutes. To encourage attendance, Otwell distributed seed corn to local boys and started a contest to see who could make the most yields from it. The first year's contest involved 500 boys. There is also some evidence that the first boys club was organized in the South at Holmes County Mississippi. W.H. Smith, the local school superintendent, organized the club (True). Agricultural clubs for girls may have begun in the South in Aiken County, South Carolina in 1910 (True).

At some point, agricultural clubs were organized in schools for the purpose of socialization and to stimulate interest in academic work. These clubs met monthly and agricultural subjects were discussed. Elementary children were organized into junior project clubs (Berry, 1924). In his agricultural education training handbook, Berry (1924) referred to the advising role of teachers in agricultural clubs. Agriculture teachers should be present in the club meetings to lend formality to the meeting, and to offer advice on the matters being discussed. "The wise teacher utilizes pupil activities to as great extent as possible, thereby developing leadership qualities in pupils" (Berry, p. 196).

With the passage of the Smith-Hughes Act in 1917, the national coordination of agricultural education naturally made it convenient for the development of an organization for rural youth that encouraged best practices in agricultural production, and provided an outlet for personal growth and development. The National FFA Organization (FFA) was formed in 1928 to encourage social development and agricultural skill development.

In the 1930's and 1940's, school administrators began to question the role of FFA in the agricultural education program. The Smith-Hughes Act created a partnership between the federal government, state education agencies, and local schools in the administration of agricultural education programs, but did not specifically define the role of FFA in agricultural education. Agricultural education students were participating in FFA field trips, judging contests involving livestock, and other FFA activities that created liability issues for locals education boards (Tenney, 1977). Furthermore, state and federal employees were administering the FFA organization, even though it was a private organization (Talbert et al., 2006). Prior to the FFA, local agriculture clubs were not well

coordinated. Once agriculture clubs became FFA chapters, there was a concern about the degree of responsibility and liability for FFA activities by local school boards. Efforts to resolve this and other administrative matters eventually led to a Congressional charter for the National FFA Organization in 1950. This charter established the FFA organizations purpose, in part, to "create, foster, and assist subsidiary chapters composed of students and former students of vocational agriculture in public schools qualifying for federal reimbursement under the Smith-Hughes Vocational Education Act (20 United States Code 11-15, 16-28" (National FFA Organization, 2006b).

The second objective of this research project was to determine the origin of the integrated agricultural education model. The United States government eventually established direct federal funding for agricultural education through the passage of the Vocational Education Act of 1917. This act, also known as the Smith-Hughes Act, provided funding for the purpose of training teachers in agricultural education, industrial arts education and home economics education. The act paid the salaries of teachers in these subjects, provided funding for the establishment of teacher education programs in colleges and universities, and funded the hiring of supervisors to manage the expenditure of funds at the school level. These supervisors provided direct assistance to teachers in the teaching of their respective subjects. The Smith-Hughes Act also created a state board for vocational education in each of the states receiving funding under the Act, and created the Federal Board for Vocational Education (Talbert et al., 2006). The reports of the Federal Board for Vocational Education and the various agencies that eventually assumed responsibility for the administration and oversight of vocational education provided some insight as to the development of the integrated model. The U.S. Office of Education provided direction to teachers and state administrators as to the appropriate use of federal funds to supervise student farm projects (United States Department Of The Interior, Office of Education, 1937). Thus, as early as 1917 with the passage of the Smith-Hughes Act, the federal government recognized the need to link together classroom instruction and supervised farming projects.

The Vocational Education Act of 1947, also known as the George-Barden Act or Public Law 79-586, extended the provisions of the Smith-Hughes Act by providing funding to be used by teachers for the purpose of supervising apprentices on the job, and for the purpose of attending meetings and activities of educational associations and other organizations (Hawkins, Prosser, & Wright, 1967). This presumably refers to FFA meetings and activities. This provision probably arose out of the previously noted concern that schools were not sufficiently insured against the liability of students attending off-campus FFA activities. This measure provided the legal basis for teachers to supervise students at off-campus FFA activities (Tenney, 1977).

Nolan (1918) proposed that agricultural clubs' agendas include plans to buy, sell, or exhibit an agricultural product, plans for social activities, a calendar, and instruction on technical content germane to club projects. Under this method, boys and girls who were to take agricultural subjects in school were organized into clubs. In these clubs, they were assigned specific home projects. All students completed the same projects for the first two years and assumed new projects as the situation warranted (Nolan). Hammonds (1950) proposed that the agriculture teacher is equally responsible for both the instructional program and the FFA program and that the FFA is an integral part of vocational agriculture. Hamlin (1962) proposed that the Smith-Hughes Act provided federal funding, but the local schools were responsible for local policy, developing a local purpose for agricultural education, and the implementation of agricultural education in the local community. Hamlin also proposed that the FFA performed citizenship education and promote civic responsibility, and as such, the FFA was important enough to be integral to the program. Supervised farming stresses individual effort while the FFA encourages group effort (Hamlin). Stevens (1967) supported the inclusion of FFA and identified the basic unit of FFA as the local

FFA chapter in a school. Binkley and Hammonds (1970) supported the agricultural education model by stating that, "Each student in vocational agriculture should have a supervised experience program… because practice is essential to learning" (p. 18), yet, "The FFA is an important part of vocational agriculture…. Membership is voluntary" (Binkley & Hammonds, p. 18). Furthermore, advancement in FFA depends in large part on a student's SAE. SAE will help students get established in a vocation (Binkley & Hammonds; Snedden, 1923).

Glen C. Cook wrote a number of textbooks designed to prepare agriculture teachers for field service. Cook's Handbook on Teaching Vocational Agriculture was first published in 1938, and subsequent editions of it appeared in 1947 and 1952. Under the new authorship of Lloyd Phipps, the handbook continued to be published as late as 1988. This textbook, in its various editions, was used for more than five decades in teacher education programs in the United States. In the 1938 handbook, Cook identified four phases of vocational agriculture: classroom work, supervised farm practice, farm mechanics, and extracurricular activities. Cook (1938) considered supervised farm practice as an integral part of the vocational agriculture program but stopped short of making the same judgment about the FFA. FFA activities were included as part of a group of extracurricular activities acceptable for agricultural education students. These extracurricular activities included 4-H and agricultural clubs in addition to the FFA. However, in Cook's 1947 Handbook on Teaching Vocational Agriculture, the major phases of instruction were identified as classroom activities, supervised farming programs, farm mechanics, community food preservation activities, and Future Farmers of America activities.

Cook (1947) defined the primary aim of vocational education in agriculture as preparing current and future farmers for proficiency in farming but concluded that both supervised farming programs and the FFA were integral parts of the vocational agriculture program. Cook does not explicitly state that farm mechanics were integral components of the vocational agriculture program. Instead these programs were sub-components of the integral components. Specifically, farm mechanics was a sub-component of supervised farming programs, and the community food preservation activities were a good feature in vocational agriculture programs for increasing community support and awareness of the total program (Cook, 1947).

Later editions of the Handbook on Teaching Vocational Agriculture (Phipps & Cook, 1952; Phipps, 1966, 1972, 1980; Phipps & Osborne, 1988) continued to support the three-component model of agricultural education with one caveat. The component devoted to youth organizations was expanded to include the New Farmers of America and Young Farmers in the 1966 and 1972 editions of the Phipps text (Phipps, 1966, 1972). References to the New Farmers of America in the agricultural education model disappeared after their assimilation by the Future Farmers of America. In the 1988 edition of the handbook (Phipps & Osborne), references to Young Farmers in the model had disappeared, and the four instructional components became classroom instruction, supervised experience, laboratory instruction, and vocational student organization.

The various editions of the Cook's handbook provided some of the background into the development of the agricultural education model but did not reduce the model exactly to the present day three-component version. In the 1970's, the FFA began a series of teacher development programs designed to create high quality agricultural education programs (C. Coleman Harris, personal communication, September 12, 2006). The outgrowth of these teacher development programs caused the inclusion of the integral three-component model of classroom and laboratory instruction, supervised experience, and FFA in the 1975 version of the FFA Advisors Handbook (National FFA Organization, 1975). Page seven of the text has the Venn configuration of three overlapping circles graphically portraying these three components. The model was

explained in the handbook in such a way as to justify the integral nature of FFA with the instructional program. FFA activities require a combination of supervised experience and instruction. The handbook defines instruction as the classroom component involving the practical application of instruction in agricultural sciences. Instruction is explicitly referred to as a "component" of the model. Supervised agricultural experience is defined as the individual and independent application of knowledge acquired in the agricultural classroom by a student under the supervision of the agriculture teacher. The 1975 FFA Advisors Handbook gives the following example of the integral nature of the three components in the model:

> The FFA Proficiency Award program is a good example of this interrelationship. In the classroom students learn the advanced methods of beef cattle production. Through the supervised occupational [sic] experience program, the students put the principles and practices learned in the instructional program to practical use. The FFA Beef Proficiency Award program provides the vehicle whereby students receive recognition for their accomplishments. (National FFA Organization, 1975, p. 7).

Bender, Taylor, Hansen and Newcomb (1979) describe the FFA as an integral part of agricultural education, but the purpose of SAE is to encourage participation in agricultural careers. There is no direct mention of SAE as being integral to agricultural education. The purpose of SAE is to provide specialized knowledge about agricultural subjects, help students get started in agricultural occupations, and create an opportunity for a student to earn money. Wall (1969) proposed that in order for the FFA to effectively contribute to the instructional program, FFA activities should support SAE and be a learning tool led by the members.

Conclusions, Discussion and Recommendations

This study concluded that each of the three components of the agricultural education model originated at different times in American history but were developed simultaneously. Supervised experience was probably the first of the three components to originate in the United States but reached a highly sophisticated level of development when it paired first with formal instruction in agricultural education and then later with formal instruction and the FFA. Formal instruction in agricultural education probably began in 1858, and although the FFA was officially established in 1928, similar agricultural youth organizations probably began either at the end of the nineteenth century or the beginning of the twentieth century. This study did not find evidence of an established date or recognized event that created the three-component agricultural education model. The Civilization Fund Act of 1819 established agricultural education and, to a minor extent, the relationship between instruction and supervised experience. However, the Smith-Hughes Act of 1917 provided a more sophisticated linkage between classroom instruction and supervised experience. Federal legislation amending the provisions of the Smith-Hughes Act of 1917 supported the incorporation of FFA into the local agricultural education program. The federal charter incorporating the FFA created an opportunity for the FFA organization to exist in schools supported by the Smith-Hughes Act. Furthermore, this study did not find evidence of a significant legal basis for the integral nature of the three-component agricultural education model. State and federal legislation may have influenced the adoption of the model, but no government mandate was found that compelled agriculture teachers to adopt the model for use in their programs.

The integrated model for agricultural education seems to describe the philosophical thought surrounding agricultural education in the early twentieth century, and as such, became the guide for what agricultural education was to be or become. While many agricultural education professionals see classroom instruction, supervised experience, and the FFA as integral components of a larger model, there

are others who do not share the same sentiment. For the model to be successful to a significant degree, there must be a commitment by all stakeholders to deliver all components collectively to those students who can be served by it. It is recommended that the nature of the three-component agricultural education model be examined to determine if each component is actually needed in the model. Furthermore, a study of alternative models for the delivery of agricultural education would be very useful to the profession.

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